

**REPORT/RECOMMENDATION TO THE BOARD OF SUPERVISORS
OF SAN BERNARDINO COUNTY, CALIFORNIA
AND RECORD OF ACTION**

56

May 4, 2004

Continued from April 27, 2004

FROM: **LEYDEN L. HAHN**, Chief Information Officer
Information Services Department

SUBJECT: **BIG BEAR LAKE AERIAL PHOTOGRAPHY AND DIGITAL MAPPING**

RECOMMENDATIONS: Award a contract in the amount of \$124,898 to Engineering Systems to perform aerial photography and provide digital mapping services that will be used to plan and map investments in storm water control facilities in the Big Bear Lake area.

BACKGROUND INFORMATION: On January 27, 2004, the Board of Supervisors accepted a \$490,000 grant from the State of California Water Resources Control Board to pay for a Geographical Information System (GIS) Storm Water Mapping Study of the area surrounding Big Bear Lake. The purpose of the study is to support the planning necessary to implement an adequate storm water control program by developing GIS mapping data for the Big Bear Lake watershed area. One of the major components of the study is to conduct high resolution aerial photography and digital mapping that includes elevation contours of the watershed area. The study deliverables will be used by the United States Army Corps of Engineers (USACE) to develop adequate flood control systems to significantly reduce flooding, erosion, sedimentation, and pollution caused by storm water runoff. Unless measures are taken to mitigate this situation, continuing problems could result that would have a severe impact on the economic vitality of this important mountain community and tourist destination.

Also on January 27, 2004, the Board of Supervisors approved the release of a Request for Proposal (RFP) to perform the aerial photography and produce digital mapping data. The RFP was subsequently posted on the County's web site. On February 9, 2004, a non-mandatory vendor pre-proposal meeting was held and was attended by nine potential vendors. Eight proposals were received prior to the February 20, 2004 deadline.

A review panel was convened to evaluate the proposals. The panel was comprised of two senior members of the Information Services Department (ISD) GIS team, a survey division chief from the Department of Public Works, the contract manager from the State Water Resources Control Board, an expert on hydrology from the USACE, and a Lead Surveyor in the Survey and Mapping Unit from the USACE. The proposals were evaluated based on:

- 1) Technical factors related to the specifications defined in the RFP and approved by the USACE.
- 2) Previous experience by the vendor in producing the necessary product deliverables where the study area consists of dense forest and steep slopes with significant elevation changes in a relatively small area (37 square miles).
- 3) Project time frame (the County is obligated to deliver the final report to the State by November 1, 2004; extensions are not permitted).
- 4) Reference checks and recommendations from previous customers.
- 5) Cost.

Weights were assigned to the evaluation factors such that the technical analysis and project time frame were considered ahead of the other criteria. The initial proposal analysis is summarized as follows:

Page 1 of 3

Record of Action of the Board of Supervisors

56

**BOARD OF SUPERVISORS
BIG BEAR LAKE AERIAL PHOTOGRAPHY AND DIGITAL MAPPING**

May 04, 2004

Page 2 of 3

56

Rank	Vendor	Total Weighted Score	Cost
1	Engineering Systems	495	\$ 124,898
2	Sanborn	440	\$ 39,500
3	Psomas	420	\$ 35,855
4	Triathlon	350	\$ 80,116
5	Pinnacle Mapping	310	\$ 52,668
6	HJW Geospatial	300	\$ 127,120
7	VarGIS	265	\$ 26,500
8	Digital Mapping	250	\$ 126,500

The vendors ranked third through eighth were eliminated from consideration because their proposals indicated a technical lack of understanding of the project requirements, they proposed the use of certain technologies that would not produce acceptable results, or their project time frames were either too long or not specified.

Representatives from the top two vendors, Engineering Systems and Sanborn, were invited to meet with a second panel to review their proposals and provide more details on their processes. The panel consisted of staff from ISD, a representative from the Survey Division of the Department of Public Works, a representative from the Purchasing Department, and a representative from the USACE.

This project is extremely technical. The geographic data produced will have strategic planning value for this particular study and for other projects related to Big Bear Lake in the future. In evaluating the technical nature of the proposals, County staff relied heavily on USACE for their expertise, their previous experience with similar projects, and their recommendations since USACE will be the ultimate users of the data and they will be making engineering design decisions based upon this study. The County was advised by the state contract manager that cost was not a deciding factor for this project and that all vendor bids were within the anticipated budget for this aspect of the project. The quality of the product deliverable was paramount together with meeting the project time frame.

The following evaluation factors were considered as part of both the initial proposal review and the onsite meetings with the two highest ranking vendors:

- 1) Flight plan and control points. The County provided the vendors with data containing the location of existing ground control points established by the Surveyor and used for aerial reference. The RFP required vendors to analyze the study area and, as part of their proposals, to indicate the location of additional control points they would require. Engineering Systems submitted a detailed flight plan that indicated a thorough understanding of the flight process that was necessary to capture the necessary high-resolution images in order to produce the digital mapping data. Their control point plan even considered the location of existing access, i.e., fire roads, dirt trails, etc., that will allow the Surveyor to establish new control points. Engineering Systems requires 11 new control points. These additional control points represent an additional cost to the project. Their flight plan consists of 25 flight lines, some of which are parallel over the tributaries that feed into the lake. Sanborn's proposal consisted of only 13 flight lines. The coverage of the tributaries was generally perpendicular to the streams. Sanborn's plan requires 13 new control points and did not appear to consider locating them near existing points of access. In the opinion of the evaluation committee, the approach taken by Engineering Systems will result in a much higher quality product because of the increased number of flight lines and resulting images being captured, as well as the better detail, overlap, and elimination of shadows by concentrating some of the flight lines directly over and parallel to the tributaries.
- 2) Post-flight processing. Once the flight is complete, the film must be processed. The first part of this is typically accomplished in a "clean room" environment so that imperfections and anomalies are not introduced onto the film. Engineering Systems provided a detailed account of how this was done. Sanborn indicated that they had a clean room but they did not demonstrate any knowledge about the process.

56

**BOARD OF SUPERVISORS
BIG BEAR LAKE AERIAL PHOTOGRAPHY AND DIGITAL MAPPING**

May 04, 2004

Page 3 of 3

56

- 3) Photogrammetric processing. Once the images are digitized, they must be edited using both automated and manual methods. This is a labor-intensive process and typically represents a significant portion of the cost. Engineering Systems proposes to perform this function in-house in Los Angeles with a certified photogrammetrist due to the relatively small study area and the short time frame. Sanborn proposes to offshore this work at their Mumbai, India facility. Their India labor cost is much lower compared to performing this work at their Colorado office and accounts for a significant portion of the price difference between Engineering Systems and Sanborn.
- 4) References. All vendors were required to include three to five customer references with their proposals. The Engineering Systems references were all extremely positive and highly complimentary. All references indicated they were pleased with the quality of their work, in meeting the required time schedules, and would engage them again for future work. The references for Sanborn were generally positive and they were by and large satisfied with Sanborn's work. However, one reference expressed concern with the quality assurance issues. All three references indicated that Sanborn had exceeded their project time estimates, though not significantly.

In addition to the external references, ISD has first-hand experience with Sanborn. This vendor is one of two subcontractors to the primary contractor for the County's Parcel Base Map project, currently in progress and managed by ISD. Sanborn has consistently underperformed the other subcontractor with regard to timeliness of delivered products and quality of work. As of April 20, Sanborn had yet to submit a single completed production parcel book. The other subcontractor had submitted 16 books. Both subcontractors had the same production start date for this work.

- 5) Licensed Surveyor. The RFP states that the contractor must ensure that it has all necessary licenses and permits required by the laws of the United States, State of California, and the County. The state Business and Professions Code §8625 and §8626(b) require that a licensed land surveyor be used for the type of work described in the RFP. Engineering Systems has a California licensed surveyor on staff as defined under the code. Sanborn did not include this information in their proposal. When asked at the onsite meeting if they had survey personnel licensed in the State of California, they indicated that they did not.

Aerial photography and digital mapping of area contours are the most critical components of this project. Based on a thorough review of the proposals, the importance of obtaining the highest quality product, and the importance of meeting the project time schedules, as well as the poor performance on another County project, ISD cautions against trusting Sanborn with this project and recommends a contract award to Engineering Systems.

REVIEW BY OTHERS: This item has been reviewed by the Purchasing Department (Allan Sanchez, Contracts Analyst, 387-2065) on April 8, 2004; County Counsel (Regina Coleman, Deputy County Counsel, 387-3266) on April 15, 2004; and the County Administrative Office (Tracy Lindsay, Administrative Analyst, 387-4659) on April 15, 2004.

COST REDUCTION REVIEW: The County Administrative Office has reviewed this agenda item and concurs with the department's proposal and recommends this action based on the importance of Big Bear Lake preservation efforts.

FINANCIAL IMPACT: The State of California will compensate the County in an amount not to exceed \$490,000 for the services provided under the grant agreement. The total costs for these services including aerial photography, additional survey control points, data compilation, and project management are entirely grant funded. The cost for the aerial photography phase of the project is within the amount budgeted for this component of the overall project. There are no local matching funds required under this grant award and there is no impact to the General Fund.

SUPERVISORIAL DISTRICT(S): 3rd

PRESENTER: Leyden L. Hahn, Chief Information Officer 388-5501

56